



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/715,922

11/18/2003

Toshifumi Osawa

CANO:099

4228

37013 7590 08/07/2007
ROSSI, KIMMS & McDOWELL LLP.
P.O. BOX 826
ASHBURN, VA 20146-0826

EXAMINER

HSU, AMY R

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

08/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/715,922

Applicant(s)

OSAWA, TOSHIFUMI

Examiner

Amy Hsu

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/21/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Applicant's arguments, filed May 21, 2007, with respect to Claim Rejections – 35 USC §102(e) and 35 USC §103 have been fully considered and are persuasive. The rejections of Claims 1-15 have been withdrawn and moot in view of the new groups of rejection. This Office Action is Non-Final and meant to replace the Non-Final Office Action (mailed February 22, 2007).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (US 6839087) in view of Suzuki et al. (US 569265).

3. Regarding Claim 1, Sato teaches an image pickup apparatus comprising: a taking lens; a main body; an image pickup device that receives light passing through said taking lens and outputs an image signal (*Fig. 1*); a photometric device (*Fig. 1 reference number 52*) and a control circuit' (*Fig. 1 reference number 31*) that sets an exposure compensation value according to an output from said photometric device; wherein said control circuit sets a first exposure compensation value according to the

luminance information outputted from said photometric device (*Col 2 Lines 40-42, an exposure time is calculated which compensates for brightness as outputted from the photometering device, therefore the exposure time described is an exposure compensation value*), to cause said image pickup device to carry out a first storage of the light passing through said taking lens (*Fig. 2 reference number S109*). (*Note: Sato teaches a first exposure time and a second exposure time is calculated in Fig. 2 before the image pickup device carries out a first storage of light passing through the lens at the last step of Fig. 2. The reference can be applied to the instant application by considering either Sato's first exposure, or Sato's first and second exposure as the "first exposure compensation value" of the instant invention*), based on the set first exposure compensation value, and sets a second exposure compensation value according to a result of the first storage (*Fig. 3 Step S112, Sato teaches a "third exposure time" which is based on the result of the first storage, represented by number 1 of Fig. 3 which is the first storage from Fig. 2. Sato's "third exposure time" is the second exposure compensation value*), to cause said image pickup device to carry out a second storage of the light passing through said taking lens, based on the set second exposure compensation value (*Fig. 3 step S114*).

Sato teaches a photometering sensor that measures brightness of the target object for the purpose of determining exposure time (*Col 4 Lines 56-59*), but is silent on whether the light comes through the taking lens or through a separate path. Suzuki teaches a similar image pickup apparatus with a photometric device (*Fig. 1 reference*

number 36), which receives light passing through the taking lens (Fig. 1 reference number 21) as taught in Col 4 Lines 40-42 and Col 5 Lines 1-3.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Sato with the teaching of Suzuki because Sato's apparatus and exposure correcting method relies on luminance information from the photometric device, and this luminance information's accuracy would be most optimized by using light directly from the taking lens rather than light from a separate path or converted signals, since light from the taking lens is the same input that goes to the imaging section of CCD.

Regarding Claim 2, Sato teaches an image pickup apparatus as claimed in claim 1, wherein said taking lens is removably attached to said main body (*Col 3 Line 9*), and said control circuit acquires information on characteristics of said taking lens from said taking lens (*Fig. 1 reference number 17 is a control circuit which works in conjunction with 11, the interchangeable taking lens, Col 3 Lines 24-27*) and sets the exposure compensation value according to the luminance information outputted from said photometric device and the information on characteristics of said taking lens (*Col 2 Lines 40-42*) to cause said image pickup device to carry out the first storage (*Fig. 2 step S109*).

Regarding Claim 3, Sato teaches an image pickup apparatus as claimed in claim 1, further comprising a mirror element (*Fig. 1 reference number 21 and Col 3 Lines 36-*

38), and wherein the light passing through said taking lens when said mirror element is in a first position (*Col 4 Lines 8-13 describes when the mirror is in a completely raised position light will enter through the lens*), and a second mirror position which does not allow light to reach sensitive components (*Col 3 Lines 63-67 through Col 4 Lines 1-3 describe how when the mirror is in an inclined position the focal plane shutter is closed to the light path*). Sato is silent as to whether the two mirror positions that control light directly affect the light reaching the photometering device since Sato does not disclose specifically the light from the lens reaches the photometering device.

Suzuki teaches a similar image pickup apparatus with a photometric device (*Fig. 1 reference number 36*), which receives light passing through the taking lens (*Fig. 1 reference number 21*) as taught in *Col 4 Lines 40-42* and *Col 5 Lines 1-3*.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Sato with the teaching of Suzuki because Sato's apparatus and exposure correcting method relies on luminance information from the photometric device, and this luminance information's accuracy would be most optimized by using light directly from the taking lens rather than light from a separate path or converted signals, since light from the taking lens is the same input that goes to the imaging section of CCD. By realizing this modification it would have been obvious to realize the mirror positions that control the light directly affect the light reaching the photometric device.

Regarding Claim 4, Sato teaches an image pickup apparatus as claimed in claim

Art Unit: 2622

3, further comprising an eyepiece lens used in observing a subject by a user (*Col 3 Lines 43 and Fig. 1 reference number 24*), and teaches an optical element that divides the light passing through said taking lens into light reaching internal components and light reaching said eyepiece lens (*Fig. 1 reference number 21 and 23, the mirror and prism are the optical elements that divide light*), but Sato fails to teach the light that reaches the internal components such as the CCD, includes the photometric device.

Suzuki teaches a similar image pickup apparatus with a photometric device (*Fig. 1 reference number 36*), which receives light passing through the taking lens (*Fig. 1 reference number 21*) as taught in Col 4 Lines 40-42 and Col 5 Lines 1-3.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Sato with the teaching of Suzuki because Sato's apparatus and exposure correcting method relies on luminance information from the photometric device, and this luminance information's accuracy would be most optimized by using light directly from the taking lens rather than light from a separate path or converted signals, since light from the taking lens is the same input that goes to the imaging section of CCD. By realizing this modification it would have been obvious to realize the light that is directed towards the internal components would include the photometric device.

Regarding Claim 7, Sato teaches an image pickup apparatus comprising: a taking lens; a main body; an image pickup device that receives light passing through said taking lens and generates an image signal, and a photometric device (as

addressed with Claim 1); a control circuit that sets an exposure compensation value according to an output from said photometric device; wherein said control circuit sets a first exposure compensation value according to the luminance information outputted from said photometric device, to cause said image pickup device to carry out a first storage of the light passing through said taking lens, based on the set first exposure compensation value, and sets a second exposure compensation value according to a result of the first storage, to cause said image pickup device to carry out a second storage of the light passing through said taking lens, based on the set second exposure compensation value (*as addressed with Claim 1*).

Sato fails to teach the photometric device is disposed at a location different from a location at which said image pickup device is disposed, for receiving the light passing through said taking lens and outputting luminance information with a mirror element movably disposed between said taking lens and said image pickup device, for reflecting the light passing through said taking lens in a direction different from said image pickup device and an optical element disposed between said photometric device and said mirror element, for guiding light reflected from said mirror element to said photometric device.

Suzuki teaches a similar image pickup device with photometric device disposed at a different location than image pickup device (*Fig. 1*), which receives light passing through the taking lens and outputs luminance information (*Fig. 1 reference number 21*, Col 4 Lines 40-42 and Col 5 Lines 1-9). Suzuki also teaches a mirror element and optical system (*Fig. 1 reference number 23*) between the lens and image pickup device

Art Unit: 2622

(Fig. 1) for reflecting light through the lens in two different directions (*towards reference number 26, the photometric section, and towards reference number 25, the image section*). See Col 4 Lines 40-44 and Col 5 Lines 1-3.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Sato with the teaching of Suzuki because Sato's apparatus and exposure correcting method relies on luminance information from the photometric device, and this luminance information's accuracy would be most optimized by using light directly from the taking lens rather than light from a separate path or converted signals, since light from the taking lens is the same input that goes to the imaging section of CCD.

Regarding Claim 8, Sato teaches an image pickup apparatus as claimed in claim 7, wherein the light passing through said taking lens reaches said photometric device when said mirror element is in a first position, and the light passing through said taking lens does not reach said photometric device when said mirror element is in a second position. The limitation of Claim 8 is addressed in the paragraph addressing Claim 3.

Regarding Claim 9, Sato teaches an image pickup apparatus as claimed in claim 7, further comprising an eyepiece lens used in observing a subject by a user, and wherein said optical element divides the light reflected from said mirror element into light reaching said photometric device and light reaching said eyepiece lens. The limitation of Claim 9 is addressed in the paragraph addressing Claim 4.

Claim 10 is a method claim for controlling the image pickup apparatus of Claim 1 including limitations addressed with Claim 1 and is therefore similarly rejected.

Claim 11 is a method claim for controlling the image pickup apparatus of Claim 1 including limitations addressed with Claim 2 and is therefore similarly rejected.

Claim 12 is a method claim for controlling the image pickup apparatus of Claim 7 including limitations addressed with Claim 7 and 3 and is therefore similarly rejected.

Regarding Claim 13, Sato in view of Suzuki teach a control method as claimed in claim 12. Sato teaches in Fig. 2 step S101 that the system waits to confirm that the photometering device is activated before it continues with exposure compensation. The system waits for both the photometering device and the image pickup device to be ready to receive light, but fails to teach that only one of the image pickup device and the photometric device receives light.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Sato to allow the user to use a manual mode where the photometering switch does not have to be activated in order to continue image pickup operations. This modification would allow the user to proceed to image pickup without the photometering operations, and so the light would only reach the image pickup device if the photometering operations were not active. Allowing the user to use a

manual mode provides more user options other than always using the exposure compensation feature based on photometric device information.

Claim 14 is a computer-readable storage medium storing a computer program for implementing a control method for the image pickup apparatus of Claim 1 with limitations addressed in the paragraph with Claim 1. Those skilled in the art will recognize a computer program is standard to implement a control method to control the functions of an image pickup apparatus. The limitations of Claim 14 are similarly rejected as those of Claim 1.

Claim 15 is a computer-readable storage medium storing a computer program for implementing a control method for the image pickup apparatus of Claim 7 with limitations addressed in the paragraphs addressing Claims 7 and 3. Those skilled in the art will recognize a computer program is standard to implement a control method to control the functions of an image pickup apparatus. The limitations of Claim 15 are similarly rejected as those of Claims 7 and 3.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being obvious over Sato (US 6,839,087) in view of Suzuki (US 5619265) further in view of Takei (US 5510837).

Regarding Claim 5, Sato in view of Suzuki teach an image pickup apparatus as claimed in claim 1, but fail to teach a photometric device that outputs luminance information on a plurality of pieces of luminance information for a plurality of areas into which a photographic screen is divided. However, Takei teaches a similar image pickup apparatus which compensates for exposure by using light measuring circuits to detect input luminance signal levels (*Col 4 Lines 64-65*). Takei also teaches in *Fig 6. and Col 5 Lines 44-47*, the image sensing plane is divided into multiple parts and the level of luminance of each divided area is evaluated. It would have been obvious at the time the invention was made to one of ordinary skill in the art to combine the image pickup apparatus that adjusts exposure based on luminance information taught by Sato with the similar apparatus taught by Takei and dividing the luminance information into a plurality of luminance information based on dividing the sensing area in multiple parts because different areas of the image can have different luminance information and this method would account for variation in luminance within an imaging area.

Regarding Claim 6, Sato teaches an image pickup apparatus as claimed in claim 1, with first and second exposure compensation values with Sato teaches are exposure times that compensate for conditions indicated by the luminance information from the photometering device that measures brightness, as addressed with Claim 1. Sato is

silent on exact parameters taken into consideration when calculating the exposure time, which compensates for lighting and environment. Sato teaches the control circuit causes the image pickup device to carry out a first storage (*Fig. 2 step S109*) based on the calculated exposure times as illustrated by Fig. 2. Fig. 3 shows that the device carries out the second storage (S114) by changing the next exposure time before taking a picture. Sato teaches the picture is taken after changing to the calculated exposure time in the first and second instance. However, Sato does not specifically teach that the exposure time is compensated for and calculated by changing the output amplification, but simply gets to the end result where the exposure time is calculated and used.

Takei teaches the exposure time is compensated or calculated by changing factors such as controlling aperture opening and the gain (*Col 7 Lines 40-44*), which is the same as output amplification.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Sato with that of Takei to calculate the new exposure time which compensates for information from the photometering device by changing the output amplification because altering the gain directly and precisely compensates for backlighting and other non ideal light situations.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure including Okamoto (US 6423958), Yamashita (US 6452419), Lee (US 6545624), and Nakamura (US 6930722).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy Hsu whose telephone number is 571-270-3012.

The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amy Hsu
Examiner
Art Unit 2622


LIN YE
SPE. ART UNIT 2622